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Description of a new species of *Parasphaerosyllis* (Polychaeta: Syllidae: Syllinae)

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Abstract.—During a study on the cryptofauna of coral reefs in Coiba National Park (Panama), specimens of an undescribed species of *Parasphaerosyllis* Monro, 1937 were collected. *Parasphaerosyllis malimalii,* n. sp. differs from all other species within the genus by its chaetal features. The new species has thick simple chaetae on median and posterior parapodia, produced by a loss of the blades and enlargement of the shafts. This type of chaeta is unique in this genus, but it has been observed in other genera of the Syllidae such as *Syllis* and *Sphaerosyllis.*

Between June 1996 and September 1998, four scientific cruises were carried out in the Coiba National Park, Panama for the study of marine invertebrates (San Martín et al. 1997). A provisional list of the polychaetes was presented in López et al. (1997), and a provisional list of syllids is included in Capa et al. (2000, 2001). In a sample of dead coral (*Pocillopora* sp.), two specimens of an undescribed species of the genus *Parasphaerosyllis* Monro, 1937 were collected.

Parasphaerosyllis is characterized by having bulbous, lemon-shaped dorsal cirri alternating with moniliform cirri on the middle-posterior part of the body. Monro (1937) originally included this genus in the subfamily Exogoninae; however, Fauvel (1939) transferred it to the subfamily Syllinae because its palps are fused only at their bases and, in addition to bulbous cirri, it bears long, moniliform dorsal cirri.

Parasphaerosyllis is a genus that comprises four described species: *P. indica* Monro, 1937, *P. uschacovi* (Chlebovitsch, 1959), *P. ezoensis* Imajima & Hartman, 1964 and *P. setoensis* Imajima, 1966. The characters used to distinguish these species are the chaetiger where the first bulbous cirri appear, the shape of the terminal papillae (articulated or simple) of the ovoid cirri, the presence or absence of a stalk at the base of these particular cirri, the degree of fusion of the palps, and the place of insertion of the lateral antennae.

Materials and Methods

The specimens were collected from a sample of a block of dead coral (*Pocillopora* sp.) in Arrecife Rosario (Northeast Coiba Island, Panama) on 16 Nov 1997. For further details, see Capa et al. (2000). Holotype and paratype are deposited at the Museo Nacional de Ciencias Naturales de Madrid (MNCNM), Spain.

Family Syllidae Grube, 1850

Subfamily Syllinae Grube, 1850

Genus *Parasphaerosyllis* Monro, 1937

Parasphaerosyllis malimalii, new species

Material examined.—Holotype MNCN 16.01/6107, paratype MNCN 16.01/6107. Substrata: *Pocillopora* sp. Arrecife Rosario 7°38′30″N and 81°45′20″W, 2.5 m depth, 16 Nov 1997.

Description.—Both specimens incomplete, posterior ends missing. Holotype 7.1 mm long, 0.4 mm wide, 59 chaetigers. Par-

atype 6.1 mm long, 0.3 mm wide, 55 chaetigers. Body without color markings, yellowish after fixation. Prostomium pentagonal, wider than long (Fig. 1A); two pairs of eyes in open trapezoidal arrangement, anterior eyes kidney-shaped, holotype with two small anterior eyespots. Three moniliform antennae; median antenna originating slightly in front of the posterior eyes (Fig. 1A, B), longer than prostomium and palps together, with about 26 articles; lateral antennae originating near anterior margin of prostomium, with about 21 articles (Fig. 1A). Palps oval, slightly longer than prostomium, fused at their bases (Fig. 1A). Tentacular segment somewhat shorter than following chaetigers, provided with two pairs of tentacular cirri; dorsal tentacular cirri with 32–35 articles and 600 μm long, ventral tentacular cirri with 18–20 articles and 200–260 μm long (Fig. 1A). Dorsal cirri longer than wide, difference more obvious in posterior region of specimens. Irregular alternation of length of dorsal cirri, 15–25 articles on anterior segments, 340–400 μm long, 14–18 articles in median-anterior region of the body, 140–200 μm long. From midbody posteriorly, long moniliform cirri alternating with other dorsal cirri, ovoid, bulbous, with an unarticulated terminal knob, apparently without stalk, some cases with fold between bulb and parapodia, having yellowish spiral fibrilar material inside (Fig. 1B–D). First bulbous cirri on holotype appear on chaetiger 20 (left side) and on chaetiger 24 (right side). On paratype bulbous cirri appear on chaetigers 25 and 27, respectively. Bulbous cirri alternate regularly with moniliform cirri to end of incomplete specimens. Anterior parapodia each with 6–7 compound chaetae with bidentate, falcigerous blades, distal tooth acute and proximal one short, small, with short spines along cutting edge; dorsoventral gradation in length of blades, 21 μm dorsally, 12 μm ventrally (Fig. 2A). Number of chaetae on each parapodium progressively decreasing, dorsal chaetae without blades and with enlarged shafts; remainder compound chaetae with shorter blades, with an indistinct proximal tooth and very short spines on cutting edge. Parapodia posterior to proventricular level each with 4–5 chaetae, dorsal-most simple and all others compound (Fig. 2B, E). Midbody and posterior segments only with simple, very thick chaetae, numbering three to five on each parapodium (Figs. 1C, D, 2F), sometimes ventral-most chaeta with very short, almost unidentate and smooth blade. Two aciculae in each anterior parapodium, one straight, with acute tip, other with curved tip (Fig. 2C). A single aciculum in median-posterior parapodia (Fig. 2D). Pharynx extending through 7–9 segments, 520 μm and 840 μm long in holotype and paratype, respectively; pharyngeal tooth located on anterior end. Proventriculus 520 μm long, extending through 6 chaetigers, with about 24 muscle cell rows (Fig. 1B).

Remarks.—Parasphaerosyllis malimalii mainly differs from all the other species described in the genus in having thick simple chaetae on midbody and posterior parapodia, produced by the loss of blades and enlargement of the shafts. This type of chaeta has been previously reported for other species in the family Syllinae, such as *Syllis amica* Quatrefages, 1865, *S. ferrani* Alós & San Martín, 1987 and *Sphaerosyllis bulbosa* Southern, 1914 (Fauvel 1923, San Martín 1984, Alós & San Martín 1987, Parapar et al. 1994). Furthermore, the blades of its compound chaetae are shorter and have a very small proximal tooth.

For comparison, we have examined the types of *Parasphaerosyllis indica* (Monro, 1937), a circumtropical species, one specimen from the Galapagos Islands (Westheide 1974) and several specimens from Cuba collected and reported by San Martín (1991); none of these specimens possesses this type of chaeta. According to Monro (1937) and Rioja (1958), the bulbous dorsal cirri first occur on chaetiger 16 on *P. indica,* whereas they first appear on chaetiger 20 on *P. malimalii,* n. sp. However, this character may not distinguish these

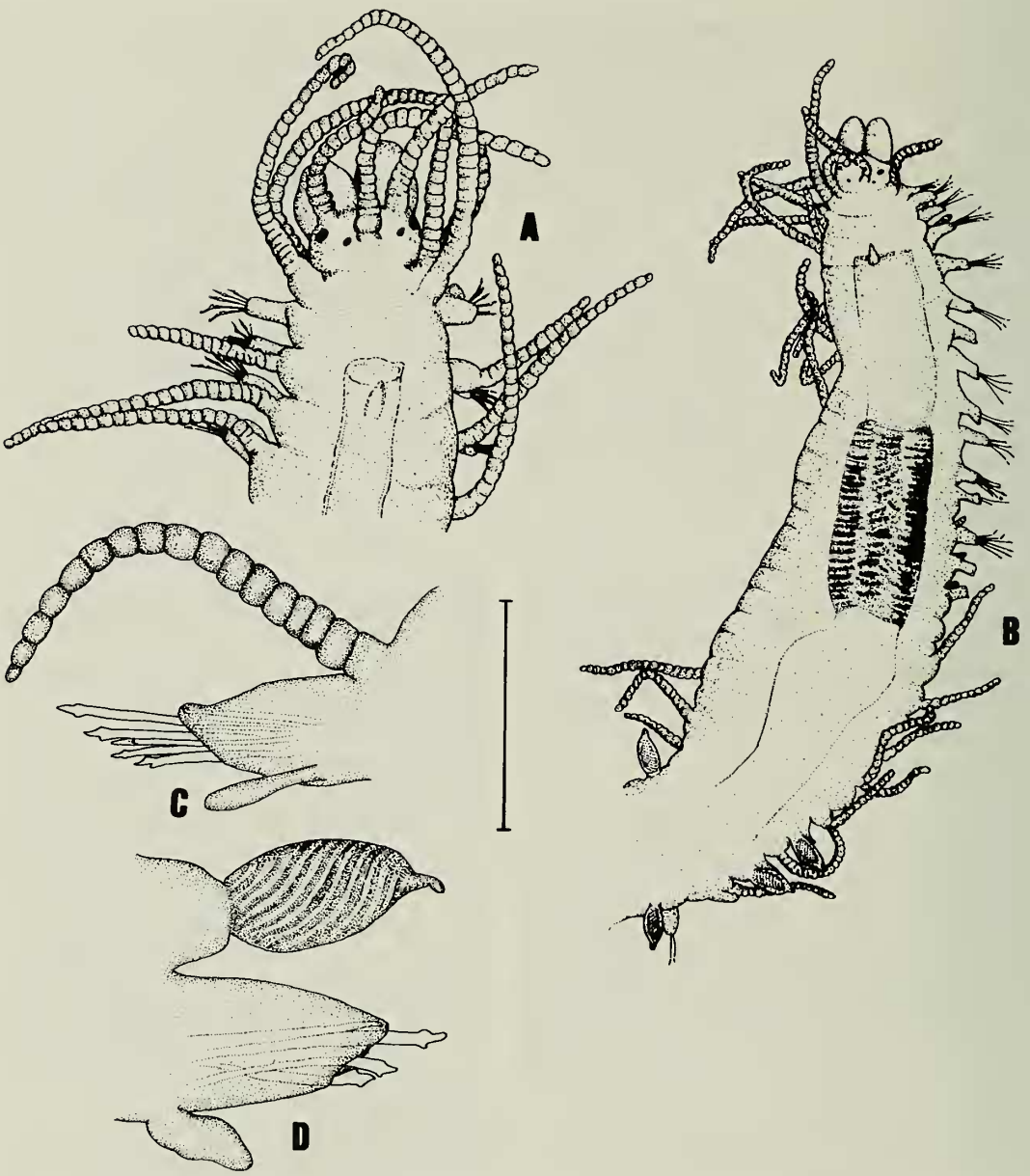

Fig. 1. *Parasphaerosyllis malimalii,* n. sp. A, holotype, anterior end, dorsal view; B, paratype, anterior end, dorsal view; C, midbody parapodium, with moniliform dorsal cirri; D, midbody parapodium, with bulbous dorsal cirri. Scale.—A, B: 225 μm. C, D: 55 μm.

species since all the specimens from Cuba recorded by San Martín (1991) from the same sample show a great degree of variation in the appearance of the first special cirri, from chaetiger 14 to 31.

Parasphaerosyllis setoensisis Imajima, 1966, a species with only one specimen recorded, could be synonymous with *P. indica.* The description and the drawings in Imajima (1966) seem to be made on the basis of a regenerating specimen. This can be concluded from the difference in width be-

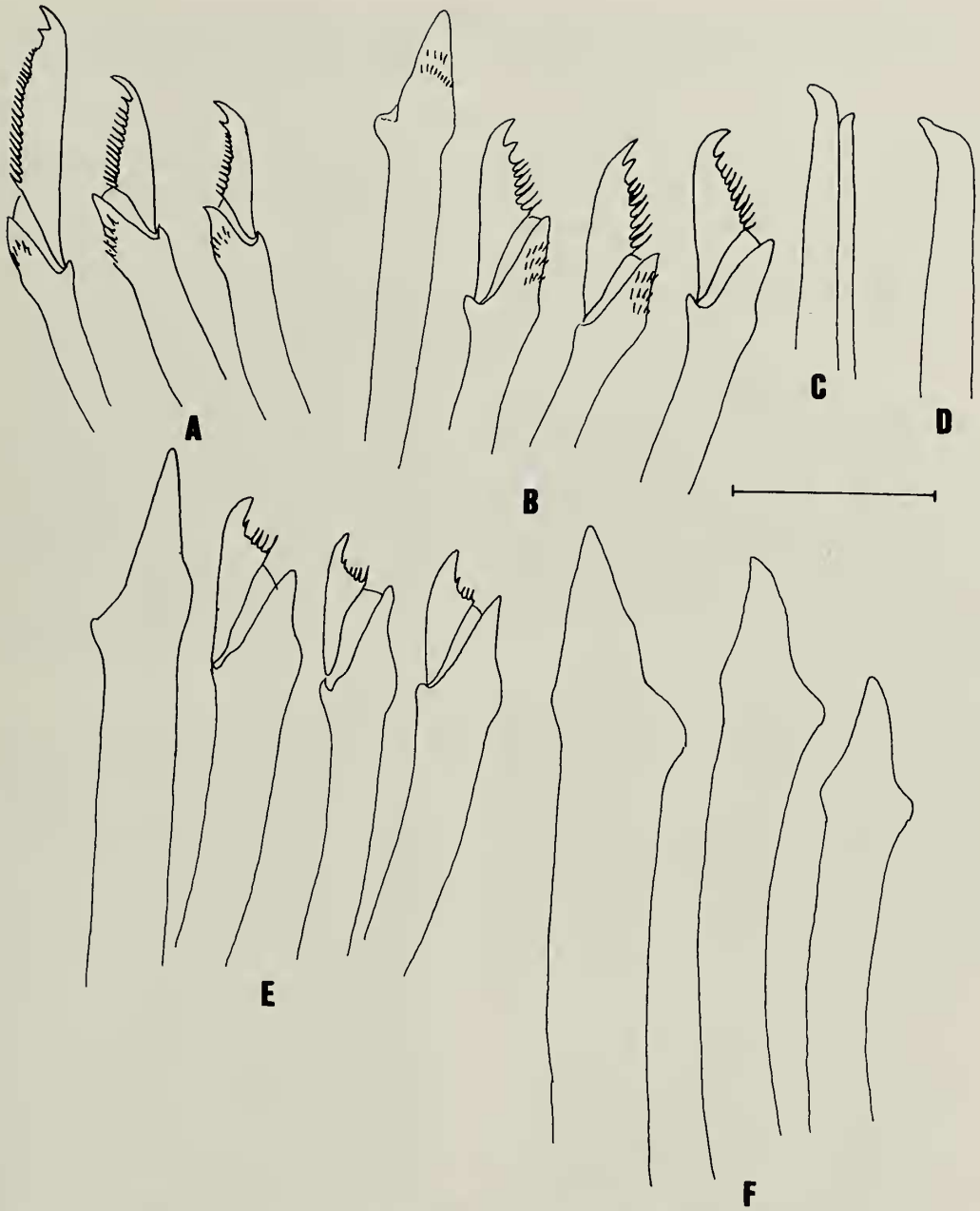

Fig. 2. *Parasphaerosyllis malimalii,* n. sp. Holotype. A, compound chaetae, anterior parapodia; B, compound and simple chaetae anterior-midbody; C, aciculae, anterior parapodia; D, acicula midbody parapodia; E, compound and simple chaetae, median-posterior region of the specimen; F, simple chaetae from posterior parapodia. Scale.—A–F: 20 μm.

tween the first four chaetigers and the remainder of the chaetigers and could explain the appearance of ovoid cirri in such an anterior position as chaetiger 4.

Parasphaerosyllis uschacovi, from Kurile islands and *P. ezoensis,* from Japan and Korea (Cheblovitsch 1959), differ from *P. malimalii* in having bulbous dorsal cirri

with a terminal knob with an articulation. The only difference between these first two species is the origin of the median antenna, between the posterior eyes and anterior to them, respectively (Imajima & Hartman 1964, Lee & Rho 1994).

Etymology.—This species is dedicated to Narciso Bastida (Mali-Mali), a Kuna Indian, who was our guide during the expeditions to the Coiba National Park and who offered useful advice and friendship.

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